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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/266,237	03/10/1999	WARREN M. FARNWORTH	97-1433	5524

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EXAMINER

KOBERT, RUSSELL MARC

ART UNIT PAPER NUMBER

2829

DATE MAILED: 11/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/266,237

Applicant(s)

FARNWORTH ET AL.

Examiner

Russell M Kobert

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 1,3,4,6,7,13-16,19-30 and 33-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,5,8-12,17,18,31 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 21 & the.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

1. Applicant's election of Invention II, claims 2, 5, 8-12, 17, 18, 31 and 32 in Paper No. 24 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 1, 3, 4, 6, 7, 13-16, 19-30 and 33-48 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Inventions and/or Species, there being no allowable generic or linking claim. Election was made **without** traverse in the Response filed August 14, 2003.

3. Applicant's arguments with respect to claims 2, 5, 8-12, 17, 18, 31 and 32 have been considered but are moot in view of the new ground(s) of rejection.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 2, 5, 8-12, 17, 18, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soejima (6114864) in view of Leedy (5103557) and further in view of "Technical Report, Shin-Etsu Inter Connector, MT-Type" (hereafter referred to as Shin-Etsu).

Soejima et al shows (Figure 6) an interconnect for testing a semiconductor component having a bumped contact comprising:

a substrate (11); and

a contact (14 and 15) on the substrate configured to electrically engage the bumped contact, the contact comprising a recess (12 and 20) in the substrate having a size approximately equal to that of the bumped contact, a plurality of flexible leads (note portions of 14 and 15 over recess 12) cantilevered over the recess configured to support the bumped contact within the recess and to move within the recess by a distance sufficient to accommodate variations in a size, a shape or a planarity of the bumped contact; as mentioned in claim 2.

As to claim 5, Soejima et al further shows a conductive via (18) in the substrate in electrical communication with the leads.

Soejima et al shows (Figure 6) an interconnect for testing a semiconductor component having a bumped contact comprising:

- a substrate (11);

- a recess (12 and 20) in the substrate;

- a plurality of flexible leads (note portions of 14 and 15 over recess 12) on the substrate cantilevered over the recess configured to electrically engage the bumped contact and to move within the recess by a distance sufficient to accommodate variations in a size, a shape or a planarity of the bumped contact; as mentioned in claim 8.

As to claim 10, Soejima et al shows a contact (19) on the substrate in electrical communication with the leads.

As to claim 11, Soejima et al shows (Figure 18) the recess having four sides (one of many of films 13) and the plurality of leads (15) comprising four leads on the four sides.

Soejima et al shows (Figure 6) an interconnect for testing a semiconductor component having a bumped contact comprising:

- A substrate (11);

- A recess (12 and 20) in the substrate;

- A plurality of leads (note portions of 14 and 15 over recess 12) on the substrate cantilevered over the recess and configured to move and to electrically engage the bumped contact within the recess;

A segment (19) on the substrate electrically connecting the leads; as mentioned in claim 12.

As to claim 18, Soejima et al shows a conductive via (18) in the substrate in electrical communication with the leads.

Soejima et al shows a system for testing a semiconductor component having a bumped contact comprising:

An interconnect on the testing apparatus comprising:

A substrate (11);

A recess (12 and 20) in the substrate having a size approximately equal to that of the bumped contact;

A plurality of leads (note portions of 14 and 15 over recess 12) on the substrate configured to electrically engage the bumped contact, each lead cantilevered over the recess and configured to move within the recess by a distance sufficient to accommodate variations in a size, a shape or a planarity of the bumped contact; as mentioned in claim 31.

However, Soejima et al fails to suggest each lead comprising a conductive polymer outer layer as mentioned in claims 2, 8, 12 and 31 or a testing apparatus and test circuitry in electrical communication with the connecting segment as mentioned in claim 31.

Leedy teaches (col 19, ln 38 – col 21, ln 11) the use of a conductive polymer outer layer upon the surface of an interconnect for testing a semiconductor component; as mentioned in claim 2.

Leedy shows (Figure 4a) a system for testing a semiconductor component having a bumped contact comprising:

A testing apparatus; (see TESTER SIGNAL PROCESSOR)

Test circuitry (see I/O bus) in electrical communication with the connecting segment (use Leedy); as mentioned in claim 31.

However, both Soejima et al and Leedy fail to suggest an interconnect for a connector comprising a material selected from the group consisting of a carbon film, metal filled silicone, carbon and silicone as mentioned in claims 9, 17 and 32.

As to claim 9, Shin-Etsu shows an interconnect for a connector comprising a material selected from the group consisting of a carbon film and a metal filled silicone (see Page 1, Paragraph 1.1 Product Features). It is further noted that the expression "the group consisting of a carbon film and a metal filled silicon" has been given its broadest reasonable interpretation to mean "a carbon film or a metal filled silicon."

As to claims 17 and 32, Shin-Etsu shows an interconnect for a connector comprising a material selected from the group consisting of carbon and silicone (see Page 1, Paragraph 1.1 Product Features). It is further noted that the expression "the group consisting of carbon and silicon" has been given its broadest reasonable interpretation to mean "carbon or silicon."

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have combined the teaching of Shin-Etsu and Leedy with that of Soejima et al to make the claimed invention because both Leedy and Shin-Etsu suggest the use of conductive polymer material to improve the coefficient of thermal expansion

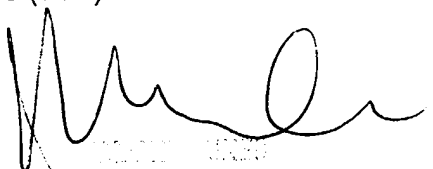
properties of probe elements such as that disclosed in Soejima et al as well as provide improved reliability of electrical conduction between probe elements and electrical contacts on semiconductor devices such as Ball Grid Array (BGA) type devices.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kobert whose telephone number is (703) 308-5222. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Russell M. Kobert
Patent Examiner
Group Art Unit 2829
November 14, 2003



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SIGNATURE OF EXAMINER
RUSSELL M. KOBERT